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| 10/531,480 | 04/15/2005 | Kenichiro Nakajima | Q72653 | 9084 |

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| EXAMINER | |
|---|---|
| SHEEHAN, JOHN P | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/531,480 | NAKAJIMA, KENICHIRO | |
| | Examiner | Art Unit | |
| | John P. Sheehan | 1793 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *28 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *13-22* is/are withdrawn from consideration.

5)☒ Claim(s) *3-7* is/are allowed.

6)☒ Claim(s) *8-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102/103*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 8 to 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Buschow (Buschow ‘535, US Patent No. 4,582,535, cited by the Examiner).

Buschow ‘535 teaches specific example alloys having compositions that are encompassed by the instant claims (for example see, column 2, lines 50 to 55; column 3, lines 16 to 25, 40 to 45 and 59).

The claims and Buschow '535 differ in that Buschow ‘535 is silent with respect to the crystal structure recited in the instant claims. Further, Buschow ‘535 does not teach the process steps recited in product by process claim 8.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because Buschow '535's example alloys have compositions that are encompassed by the instant claims. In view of this, Buschow '535's example alloys would be expected to posses all the same properties as recited in the instant claims, In re Best, 195 USPQ, 430 and MPEP 2112.01.

> "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada,15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best,195 USPQ 430, 433 (CCPA 1977)." (emphasis added by the Examiner) see MPEP 2112.01.

Regarding claim 8,it is the Examiner's position that the process steps recited in applicants' product by process claim do not necessarily lend patentability to the claimed product, MPEP 2113.

> "[E ]ven though product-by-process claims are lim - ited by and defined by the process, determination of patentability is based on the product itself. The patent- ability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe* ,777 F.2d 695,698,227 USPQ 964,966 (Fed. Cir.1985.

It is noted that the use of a rejection under 35 USC 102/103 for product by process claims as set forth above has been approved by the courts, see MPEP 2113.

> "[T ]he lack of physical description in a product-by-process claim makes determination of the patentabil - ity of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art dis - closes a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown* , 459 F.2d 531,535,173 USPQ 685,688 (CCPA 1972).

***Claim Rejections - 35 USC § 103***

4. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al. (Fujita, journal article entitled, "Itinerant-Electron Metamagnetic $La(Fe_xSi_{1-x})_{13}$ Compounds", cited in the IDS submitted April 15, 2005).

Fujita's disclosure is discussed on pages 2 and 3 of the instant specification, therefore the Examiner will refer to the applicants' specification regarding the teachings of Fujita.

Based on this discussion in the instant specification, Fujita teaches an alloy composition that is encompassed by the instant claims (see applicants' specification, page 2, third full paragraph) having a $NaZn_{13}$ structure as recited in the instant claims (see applicants' specification, page 3, third full paragraph). Fujita teaches that the

disclosed alloy is made by atomization (applicants' specification, page 3, third full paragraph).

The claims and Fujita differ in that Fujita does not appear to teach the heating temperature nor the cooling rate recited in process claims 1 and 2.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because there is nothing to indicate that the claimed heating temperature and cooling rate in any way differs from the heating temperature and cooling rate encountered in Fujita's process of atomization.

***Allowable Subject Matter***

5. In the previous Office action the Examiner objected to claims 5 to 7 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In the response submitted July 28, 2008, applicants have rewritten claim 5 in independent form. Accordingly, claim 5 is now allowed as well as dependent claims 6 and 7 which depend from claim 5.

6. In the previous Office action the Examiner also indicated that claims 3 and 4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph. In the response submitted July 28, 2008, applicants have rewritten claim 3 in independent form and amended claim 3 to overcome the rejection under 35 U.S.C. 112, 2$^{nd}$ paragraph. Accordingly, claim 3 is now allowed as well as dependent claim 4 which depends from claim 3.

***Response to Arguments***

7. Applicant's arguments filed July 28, 2008 have been fully considered but they are not persuasive.

8. Regarding the rejection of claim 8 in view of Buschow, applicants, referring to Example 1 and Comparative Example 1 disclosed in the specification, argue that the cooling rate recited in product by process claim 8 and exemplified in Example 1 produces a different microstructure than that produced in Comparative Example 1.

9. The Examiner is not persuaded. The alloy composition used in Example 1 represents but one example of the alloy composition recited in claim 8 which recites the claimed alloy in terms of elements ranges. Therefore Example 1 representing the instantly claimed invention is not commensurate in scope to claim 8, and therefore is not persuasive, MPEP 716.02(d). General superiority cannot be inferred from the results obtained using a single embodiment of the claimed invention, In re Greenfield, 197 USPQ 227, 230 and MPEP 2145.

10. Regarding the rejection of claim 9 in view of Buschow, applicants, referring to Example 1 and Comparative Example 1 disclosed in the specification, argue that the use of different conditions results in different phase spacing. The Examiner is not persuaded. In the specification at page 27, paragraph 2, at the end of Example 1, it is disclosed that;

> "According to the present invention...a dispersed phase spacing of 0.01 to 100 μm can be produced" (emphasis added by the Examiner)

In view of the use of the phrase “can be”, this passage is not considered as a disclosure of the actual phase spacing obtained in Example 1 but rather is considered to be a phase spacing that may be attained by the instant invention. Further, the phase spacing of 0.01 to 100 μm recited in claim 9, overlaps the phase having a size of 100 μm or more obtained in Comparative Example 1 (page 27, 4th line form the bottom). Additionally, the alloy composition used in Example 1 represents but one example of the alloy composition recited in claim 9 which recites the claimed alloy in terms of elements ranges. Therefore Example 1 representing the instantly claimed invention is not commensurate in scope to claim 9, and therefore is not persuasive, MPEP 716.02(d). General superiority cannot be inferred from the results obtained using a single embodiment of the claimed invention, In re Greenfield, 197 USPQ 227, 230 and MPEP 2145.

11. Regarding the rejection of claim 10 in view of Buschow, applicants, referring to Example 2 and Comparative Example 2 disclosed in the specification, argue that the use of different cooling rates results in alloys having different amounts of the NaZn phase. The Examiner is not persuaded. The alloy composition used in Example 2 represents but one example of the alloy composition recited in claim 10 which recites the claimed alloy in terms of elements ranges. Therefore Example 2 representing the instant claimed invention is not commensurate in scope to claim 10, and therefore is not persuasive, MPEP 716.02(d). General superiority cannot be inferred from the results obtained using a single embodiment of the claimed invention, In re Greenfield, 197 USPQ 227, 230 and MPEP 2145.

12. Regarding the rejection of claims 1 and 2 under 35 U.S.C. 103(a) as being unpatentable over Fujita et al. (Fujita, journal article entitled, "Itinerant-Electron Metamagnetic $La(Fe_xSi_{1-x})_{13}$ Compounds") applicants argue that Fujita et al.'s method includes a long term heating treatment and two melting steps resulting in an increase in production cost and an increase in oxygen content in the final alloy. The Examiner is not persuaded. Process claims 1 and 2 employ the open transitional term, "comprising" and therefore claims 1 and 2 do not preclude the additional process steps taught by Fujita et al., MPEP 2111.02. Further, the increase in expense of Fujita et al.'s process is not persuasive, MPEP 2145 VII.

13. Applicants argue that Fujita et al. does not disclose rapid quenching an alloy composition that has been produced by melting alloy raw materials. The Examiner is not persuaded. Fujita et al. discloses atomizing the molten alloy composition which is a rapid quenching method. Further, applicants have not established that there is, in fact, a difference between "melting alloy raw material" as recited in the instant claims and Fujita et al.'s step of melting.

14. Applicants' argument that Fujita et al. do not provide any information regarding the cooling rate attained in Fujita et al.'s atomization step and that there is nothing to suggest that Fujita et al.'s atomizing step would result in the cooling rate of the present claims is not persuasive. There is nothing to indicate that the claimed heating temperature and cooling rate in any way differs from the heating temperature and cooling rate encountered in Fujita's process of atomization. In making this argument applicants refer to Example 1 and Comparative Example 1 as showing that different

cooling rates can be obtained during cooling. This comparison is not persuasive in that the casting method of Comparative Example 1 is not an atomization process but rather is simply casting the molten alloy in a mold and thus is not considered to be related to nor an approximation of atomization.

### *Conclusion*

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (7:30-5:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John P. Sheehan/
Primary Examiner, Art Unit 1793

Jps